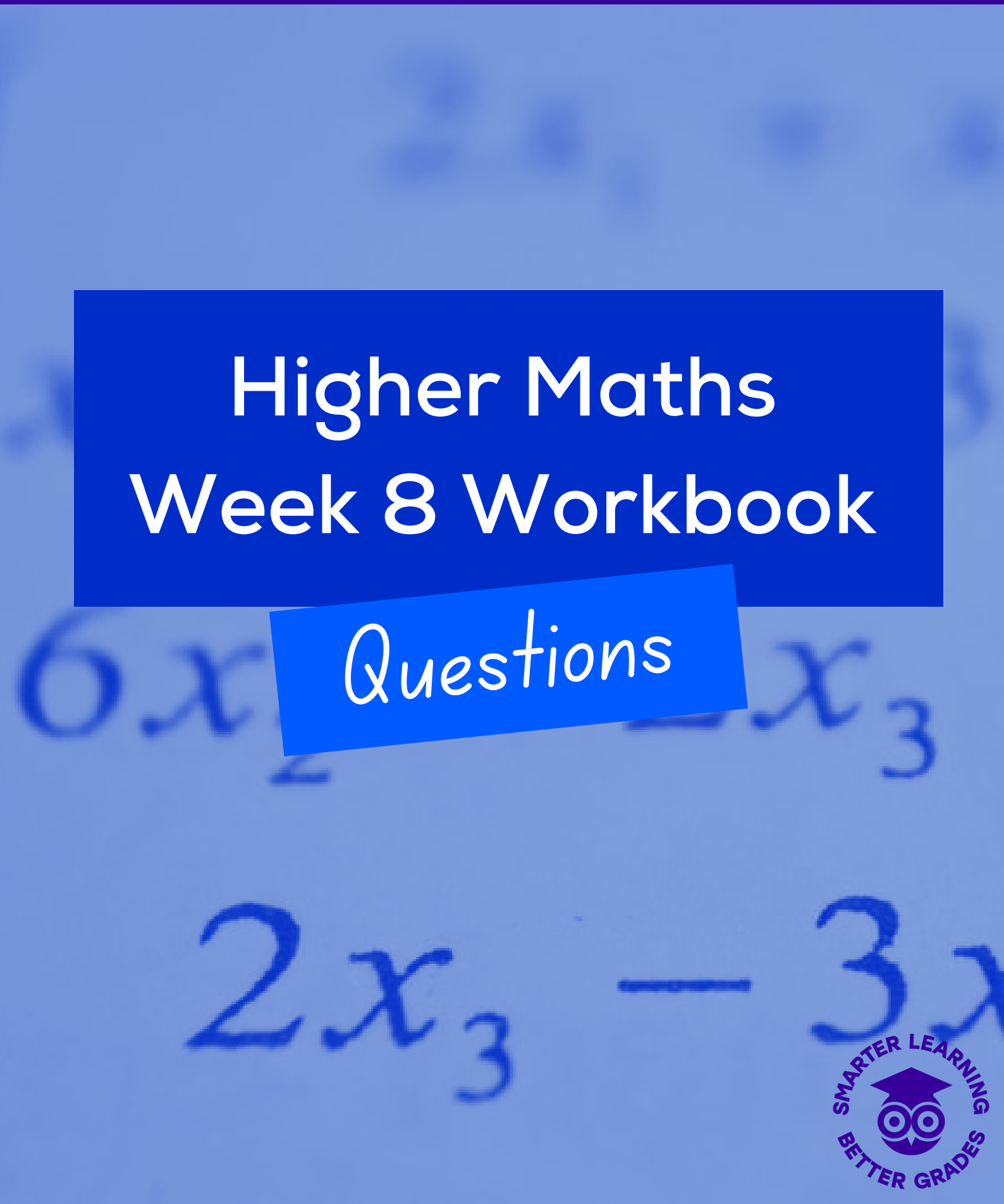
GCSE Boot Camp

Higher Maths
Week 8 Workbook

Questions



SMARTER LEARNING
BETTER GRADES

GCSE Boot Camp

Topics

Congratulations, you've made it to the final week of your 8 Week GCSE Boot Camp!

You've worked hard over 7 weeks on a range of different topics in your weekly Maths workbooks. Is there a topic you now feel more confident about that you were unsure of before? Write it down here to remind yourself of how far you've come!

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This week you have questions in your workbook on a range of topics that we've covered together throughout your boot camp. Plus this workbook also features some extra topics to challenge your knowledge.

Why not try sitting this workbook like a mini exam paper and track your progress. Set a timer, sit in a quiet room with no distractions or answers close by and make sure you only use a calculator on questions that are on the calculator paper.

Next week we'll send you the answers to this week's workbook and 2 expert video tutorials so you can mark your mini exam paper. Don't forget that for full access to all of the corresponding videos in this workbook sign up for a SchoolOnline subscription from £8.99 a month.

This week's workbook includes questions on:

- Algebra
- Geometry and Measures
- Number
- Ratio, Proportion and Rates of Change
- Graphs

SMARTER LEARNING BETTER GRADES

9 Ibrar bought a house for £145 000

The value of the house depreciated by 4% in the first year.
The value of the house depreciated by 2.5% in the second year.

Ibrar says,

"4 + 2.5 = 6.5 so in two years the value of my house depreciated by 6.5%"

(a) Is Ibrar right?
You must give a reason for your answer.

.....

.....

.....

(2)

The value of Ibrar's house increases by x% in the third year.
At the end of the third year the value of Ibrar's house is £140 000

(b) Work out the value of x.
Give your answer correct to 3 significant figures.

.....

(3)

(Total for Question 9 is 5 marks)

November 2014 Higher Calc Paper 2

***14** Peter has £20 000 to invest in a savings account for 2 years.

He finds information about two savings accounts.

Bonus Saver	**Fixed Rate**
Compound interest 4% for the first year then 1.5% each year	Compound interest 2.5% each year

Peter wants to have as much money as possible in his savings account at the end of 2 years.

Which of these savings accounts should he choose?

(Total for Question 14 is 4 marks)

Percentages

Sample A Foundation Calc Paper 3

9 Work out 234% of 150

.....

(Total for Question 9 is 2 marks)

Powers ard Roots

June 2018 Higher Non-Calc Paper 1

9 (a) Write down the value of $36^{\frac{1}{2}}$

.....

(1)

(b) Write down the value of 23^0

.....

(1)

(c) Work out the value of $27^{-\frac{2}{3}}$

.....

(2)

(Total for Question 9 is 4 marks)

Solving Equations

June 2018 Higher Calc Paper 3

7 Solve $\frac{5-x}{2} = 2x - 7$

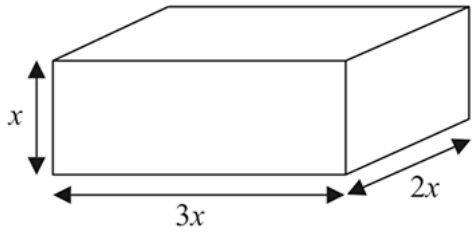
$x =$ .....

(Total for Question 7 is 3 marks)

Area

Sample B Higher Non-Calc Paper 1

9 Here is a cuboid.



All measurements are in centimetres.
x is an integer.
The total volume of the cuboid is less than 900 cm^3

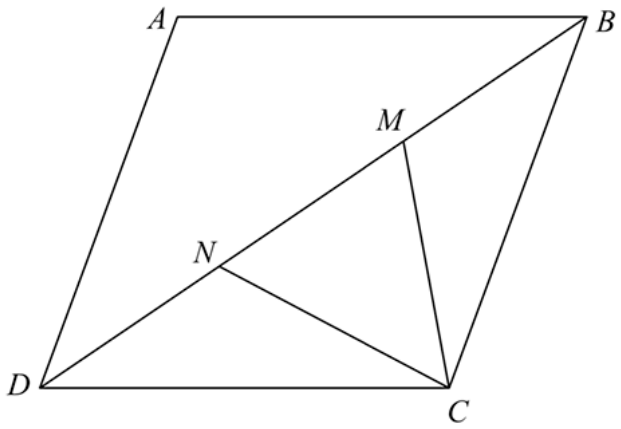
Show that $x \leqslant 5$

(Total for Question 9 is 3 marks)

Proof - Congruent Triangles

Sample A Higher Calc Paper 3

13 *ABCD* is a rhombus.



M and *N* are points on *BD* such that $DN = MB$.

Prove that triangle *DNC* is congruent to triangle *BMC*.

(Total for Question 13 is 3 marks)

Graphs

November 2015 Higher Non-Calc Paper 1

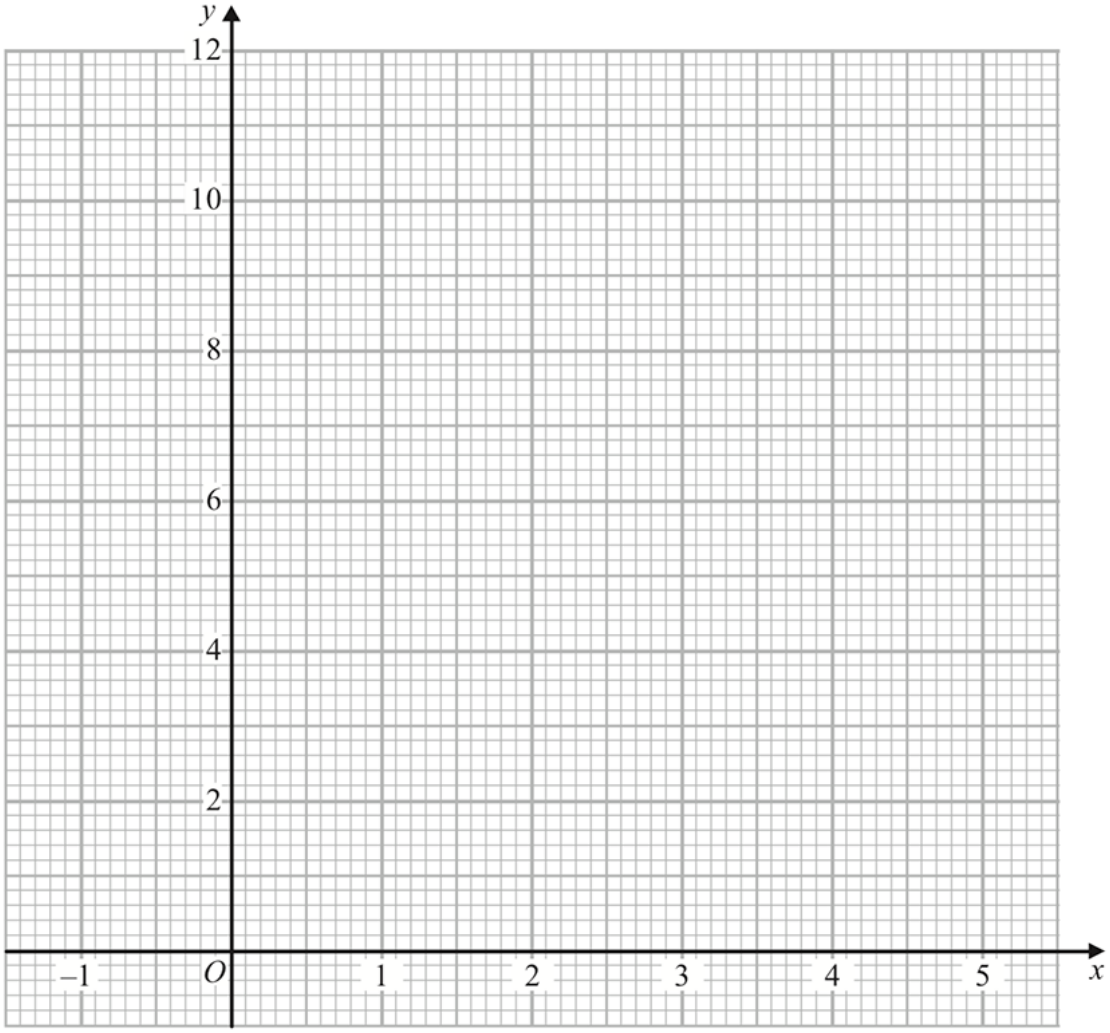
12 (a) Complete the table of values for $y = x^2 - 3x + 2$

x	−1	0	1	2	3	4	5
y	6				2		12

(2)

(b) On the grid, draw the graph of $y = x^2 - 3x + 2$ for values of x from –1 to 5

(2)



(c) Find estimates for the solutions of the equation $x^2 - 3x + 2 = 4$

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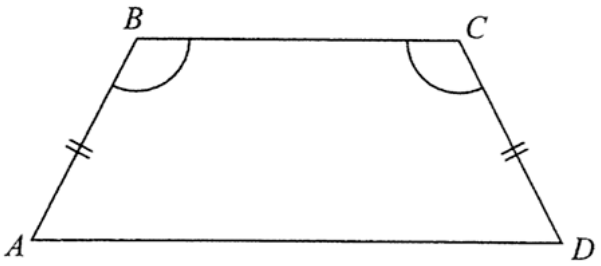
(2)

June 2017 Higher Non-Calc Paper 1

21 $ABCD$ is a quadrilateral.



$AB = CD$.
Angle ABC = angle BCD.

Prove that $AC = BD$.

Sample B Higher Calc Paper 3

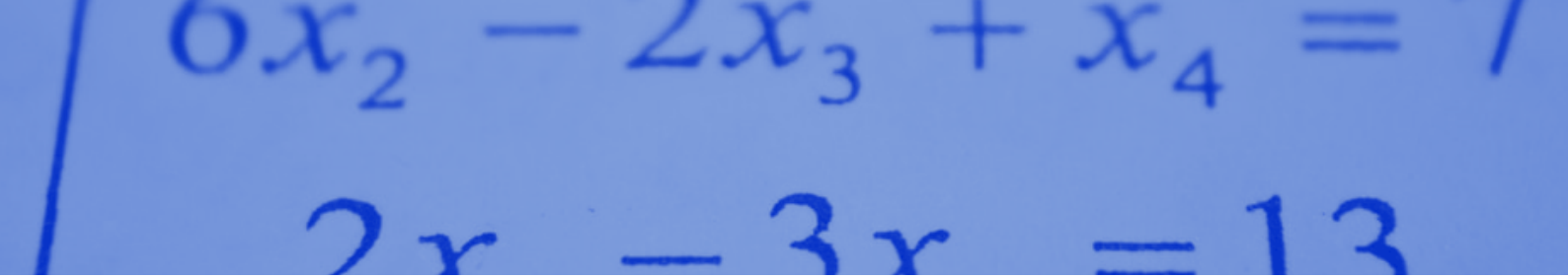
19 Prove algebraically that the recurring decimal $0.3\dot{1}\dot{8}$ can be written as $\frac{7}{22}$

(Total for Question 19 is 2 marks)

Sample A Higher Calc Paper 2

15 Prove algebraically that the recurring decimal $0.2\dot{5}$ has the value $\frac{23}{90}$

(Total for Question 15 is 2 marks)



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